Blurt it

Step 1

Name _____ **Date** _____

1. Cover your notes and put your phone face down.
2. Set a timer for 5 minutes.
3. Write down everything you remember about atomic structure (physics): facts, key words, equations, practicals, and mistakes to avoid. Diagrams count too.

Stuck? Start with one of these: isotope · half-life · alpha particle

When the timer ends, turn over and check what you remembered.

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Check it, fix it, space it

Steps 2, 3 and 4

Check it

Tick each idea you wrote down, even in your own words.

- [ ] An atom has a radius of about 0.1 nanometres; the nucleus is tiny but holds almost all the mass
- [ ] Electrons move up an energy level by absorbing electromagnetic radiation and move down by emitting it
- [ ] Isotopes are atoms of the same element with different numbers of neutrons
- [ ] The atom model changed with evidence: plum pudding, then the nuclear model after alpha scattering, then Bohr's energy levels, then neutrons
- [ ] Radioactive decay is random; activity is measured in becquerels
- [ ] Alpha is a helium nucleus, beta is a fast electron from the nucleus, gamma is an electromagnetic wave
- [ ] Compare alpha, beta and gamma by how far they penetrate, their range in air and how ionising they are
- [ ] Alpha decay lowers mass and charge; beta decay raises charge; gamma changes neither
- [ ] Half-life is the time for the number of unstable nuclei (or the activity) to halve
- [ ] Contamination is radioactive material getting onto something; irradiation is being exposed to radiation without becoming radioactive

Higher only

- [ ] Work out how much the activity falls, as a ratio, after a number of half-lives

Key words to use: nucleus · proton · neutron · electron · atomic number · mass number · isotope radioactive decay · activity · count-rate · alpha particle · beta particle · gamma ray · half-life

I remembered _____ out of 10. **Higher only: _____ out of 1.**

Fix it

Pick 3 ideas you missed. Look them up, then write each one correctly.

1	2	3

Space it

Blurt again on a fresh sheet. Gaps help you remember for longer.

Tomorrow	In 3 days	In a week
Date _____	Date _____	Date _____
Score _____ / 10	Score _____ / 10	Score _____ / 10
Higher only _____ / 1	Higher only _____ / 1	Higher only _____ / 1

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